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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,384	07/05/2005	Evangelos Gogolides	30869/40704	4756

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EXAMINER	
LEE, SIN J	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
12/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/516,384	GOGOLIDES ET AL.	
	Examiner	Art Unit	
	Sin J. Lee	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 November 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the certified English translation of the foreign priority document, previous 102(a) and 103(a) rejections over De et al'362 are hereby withdrawn.

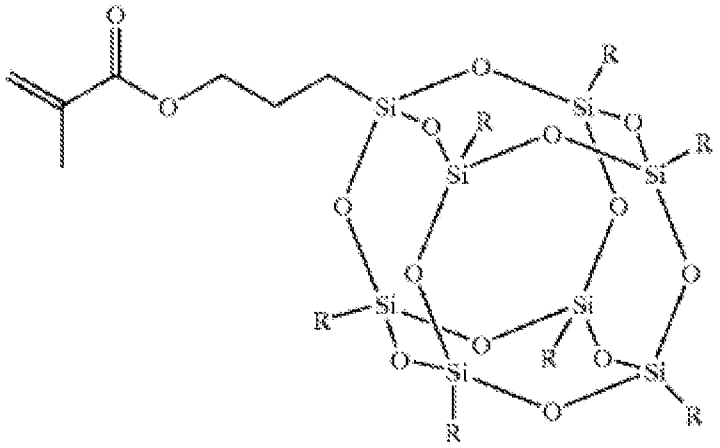
2. Due to newly cited prior art(s), the following rejections are made non-final.

Claim Rejections - 35 USC § 102

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Asakawa et al (US 6,565,763 B1).

Asakawa teaches a pattern forming material consisting of a block copolymer comprising a thermally decomposable polymer chain and a heat resistant polymer chain (see col.2, lines 6-10 and col.15, lines 39-44). Asakawa teaches a polymer chain synthesized from the following polysiloxane T8 cube as preferred examples of the heat resistant polymer chain (see col.17, lines 23-51):



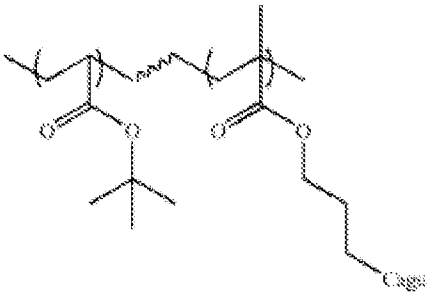
In which examples of R include a methyl group, an ethyl group, a butyl group, an isopropyl group and a phenyl group. Sine there are only 5 examples listed, one skilled in the art would immediately envisage R to be ethyl groups. Asakawa's pattern forming material having the block copolymer comprising the polymer chain formed from such compound teaches present' inventions of claims 1-5 (it is the Examiner's position that Asakawa's pattern forming material having such copolymer would inherently be capable of being used as a (chemically amplified positive tone) lithographic material as presently recited).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

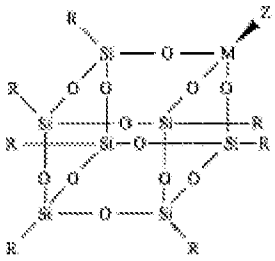
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-5, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angelopoulos et al (US 6,420,084 B1) in view of Lichtenhan et al (5,484,867).

Angelopoulos teaches a resist composition containing an SiO-containing polymer (see col.1, lines 58-67). Angelopoulos teaches (col.5, lines 36-66) that the SiO-containing polymer can include polymer such as the following:



where "cage" refers to the polyhedral oligomeric silsesquioxane group. Angelopoulos refers to Lichtenhan (5,484,867) for examples of such oligomeric group. Lichtenhan teaches (see col.6, lines 37-53) the following



Formula 3

as one of examples for POSS group. It would have been obvious to one skilled in the art to have this group as the "cage" moiety in Angelopoulos's polymer with a reasonable expectation of success. In Formula 2, R can be alkyl group such as methyl, ethyl, propyl, butyl, hexyl, heptyl, octyl and cyclohexyl groups. IT would have been obvious to have R to be an ethyl group with a reasonable expectation of success. Angelopoulos's resist composition contains a photoacid generator (see col.6, lines 54-55). Angelopoulos's positive resist is applied to a

substrate on which material layer is pre-applied. The resist film is exposed to imaging radiation and then developed (see col.7, lines 45-67, col.8, lines 1-14). Angelopoulos teaches that his resist layer can be exposed to deep UV radiation (see col.8, lines 34-36). Thus, Angelopoulos in view of Lichtenhan render obvious present inventions of claims 1-5, 9 and 10.

6. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angelopoulos et al (US 6,420,084 B1) in view of Lichtenhan et al (5,484,867) as applied to claim 1 above, and further in view of Lin et al (US 6,344,305 B1).

As discussed above, Angelopoulos teaches that his resist composition can be exposed to deep UV radiation. In the art, "deep-UV radiation" is known to include 248 nm, 193 nm and 157 nm radiation as evidenced by Lin, col.1, lines 22-23. Since Angelopoulos teaches that deep UV radiation can be used, it would have been obvious to one skilled in the art to use 157 nm radiation (which is known in the art as one of deep-UV radiation) in Angelopoulos's exposure step with a reasonable expectation of success. Thus, Angelopoulos in view of Lichtenhan and further in view of Lin render obvious present inventions of claims 6-8.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sin J. Lee/
Primary Examiner, Art Unit 1795
December 22, 2008